Topics: Loops, Variables, Conditionals

Approach: Study Problems, Create and Discuss Solutions

Main Ideas:

0. Prologue/Principles
   Laziness, Impatience, Hubris
   There’s more than one way to do it
   What do these have to do with loops and variables?

1. Admin
   HW2 part 1 Due
   Find a script buddy now
   Office Hours: Tu 6-9, Thu? Wed?

2. Loops, Conditional Statements, Variables
   a. Compare the 9-line lowest finder to the 2-line version
      Anatomy of loops and conditionals:
      boolean expression, action
      control line, loop variable, body
   b. HW2 part 1: Repeating a repetition
   c. Today we look at these topics in detail

3. Repetition with Variables in the real world
   a. 99 bottles of beer
   b. Junk mail
   c. Old MacDonald
   d. The big idea: A repeated pattern with some variation
   e. Writing it out the long way vs using 'repeat'

4. The specific problems: Drawing various shapes
   a. Using the pen in Scratch
   b. pen up, pen down, pen color, clear, hide
   c. Some shapes you might want to draw
      squares, grids, flowers
      How can one do this in simpler terms?

5. Repetition in the computer world
   a. Drawing a square - eight lines vs three lines
   b. Drawing a triangle, a pentagon, a hexagon, ..
   c. Bunches of squares - a row of boxes
      for repeat until <___>
   d. A grid of boxes
   f. The big idea: a repeated pattern of code
   g. Flowers of triangles, pentagons, ...

6. Variables: Many benefits
   a. In the row of boxes, need to keep sides in sync
   b. Also, meets the laziness principle
   c. And hubris -- code is clearer